526 Rec'd PCT/PTO **27**0CT2000

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<140> PCT/CA99/00375

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- Thr Gly Pro Gln Ala Arg Thr Ile Leu Met Gln Ser Ser Leu Pro Gln 245 250 255
- Ala Gln Leu Ala Ser Ile Trp Asn Leu Ser Asp Ile Asp Gln Asp Gly 260 265 270
- Lys Leu Thr Ala Glu Glu Phe Ile Leu Ala Met His Leu Ile Asp Val 275 280 285
- Ala Met Ser Gly Gln Pro Leu Pro Pro Val Leu Pro Pro Glu Tyr Ile 290 295 300
- Pro Pro Ser Phe Arg Arg Val Arg Ser Gly Ser Gly Met Ser Val Ile 305 310 315 320
- Ser Ser Ser Ser Val Asp Gln Arg Leu Pro Glu Glu Pro Ser Ser Glu 325 330 335
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- Glu Arg Asn Arg Arg Gln Glu Leu Leu Asn Gln Arg Asn Lys Glu Gln
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- Glu Gly Thr Val Val Leu Lys Ala Arg Arg Lys Thr Leu Glu Phe Glu 465 470 475 480
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- Leu Glu Lys Gln Lys Glu Asp Ala Gln Arg Arg Val Gln Glu Arg Asp 645 650 655
- Lys Gln Trp Leu Glu His Val Gln Gln Glu Glu Gln Pro Arg Pro Arg 660 665 670
- Lys Pro His Glu Glu Asp Arg Leu Lys Arg Glu Asp Ser Val Arg Lys 675 680 685
- Lys Glu Ala Glu Glu Arg Ala Lys Pro Glu Met Gln Asp Lys Gln Ser 690 695 700
- Arg Leu Phe His Pro His Gln Glu Pro Ala Lys Leu Ala Thr Gln Ala 705 710 715 720
- Pro Trp Ser Thr Thr Glu Lys Gly Pro Leu Thr Ile Ser Ala Gln Glu 725 730 735
- Ser Val Lys Val Val Tyr Tyr Arg Ala Leu Tyr Pro Phe Glu Ser Arg
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- Ser His Asp Glu Ile Thr Ile Gln Pro Gly Asp Ile Val Met Val Asp 755 760 765

- Glu Ser Gln Thr Gly Glu Pro Gly Trp Leu Gly Gly Glu Leu Lys Gly 770 780
- Lys Thr Gly Trp Phe Pro Ala Asn Tyr Ala Glu Lys Ile Pro Glu Asn 785 790 795 800
- Glu Val Pro Thr Pro Ala Lys Pro Val Thr Asp Leu Thr Ser Ala Pro 805 810 815
- Ala Pro Lys Leu Ala Leu Arg Glu Thr Pro Ala Pro Leu Pro Val Thr 820 825 830
- Ser Ser Glu Pro Ser Thr Thr Pro Asn Asn Trp Ala Asp Phe Ser Ser 835 840 845
- Thr Trp Pro Ser Ser Ser Asn Glu Lys Pro Glu Thr Asp Asn Trp Asp 850 855 860
- Thr Trp Ala Ala Gln Pro Ser Leu Thr Val Pro Ser Ala Gly Gln Leu 865 870 875 880
- Arg Gln Arg Ser Ala Phe Thr Pro Ala Thr Ala Thr Gly Ser Ser Pro 885 890 895
- Ser Pro Val Leu Gly Gln Gly Glu Lys Val Glu Gly Leu Gln Ala Gln 900 905 910
- Ala Leu Tyr Pro Trp Arg Ala Lys Lys Asp Asn His Leu Asn Phe Asn 915 920 925
- Lys Ser Asp Val Ile Thr Val Leu Glu Gln Gln Asp Met Trp Trp Phe 930 935 940
- Gly Glu Val Gln Gly Gln Lys Gly Trp Phe Pro Lys Ser Tyr Val Lys 945 950 955 960
- Leu Ile Ser Gly Pro Val Arg Lys Ser Thr Ser Ile Asp Thr Gly Pro 965 970 975
- Thr Glu Ser Pro Ala Ser Leu Lys Arg Val Ala Ser Pro Ala Ala Lys 980 985 990
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acc tcc aca gcc Thr Ser Thr Ala 930	_		_		2832
gac tac att gca Asp Tyr Ile Ala 945		_			2880
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tgg tgg aca gga Trp Trp Thr Gly 980	Ser Ile Gly			_	2976
tac gtc aga cca Tyr Val Arg Pro 995	Lys Asp Gln			Ser Lys Ser	3024
gga gca tca aac Gly Ala Ser Asn 1010			-	_	3072
gct gct tca ggg Ala Ala Ser Gly 1025					3120
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gcc aga ggg aag Ala Arg Gly Lys 1060			p Phe Pro Ala		3216
aag ctg cta ggt Lys Leu Leu Gly 1075	Pro Ser Ser		_		3264
gta tgt caa gtg Val Cys Gln Val 1090					3312
gag ctc aat ttc Glu Leu Asn Phe 1105					3360

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cct Pro	tca Ser	Asn	tat Tyr 1140	Val	aag Lys	atg Met	Thr	aca Thr 1145	Asp	tca Ser	gat Asp	Pro	agt Ser 1150	Gln	cag Gln	3456
tgg Trp	Cys	gct Ala 1155	Asp	ctc Leu	caa Gln	Ala	ctg Leu 1160	gac Asp	aca Thr	atg Met	Gln	cct Pro 1165	acg Thr	gag Glu	agg Arg	3504
Lys	cga Arg 1170	Gln	ggc	tac Tyr	Ile	cac His 1175	gag Glu	ctc Leu	att Ile	Gln	aca Thr 1180	gag Glu	gag Glu	cgg Arg	tac Tyr	3552
atg Met 118	Asp	gac Asp	ctg Leu	Gln	ctt Leu 1190	ttt Phe	gaa Glu	caa Gln	Lys	act Thr 1195	ctc Leu	ctt Leu	tga			3594
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Leu	Gln 50	Ser	Gly	Leu	Pro	Ala 55	Pro	Val	Leu	Ala	Glu 60	Ile	Trp	Ala	Leu	
Ser 65	Asp	Leu	Asn	Lys	Asp 70	Gly	Lys	Met	Asp	Gln 75	Gln	Glu	Phe	Ser	Ile 80	
Ala	Met	Lys	Leu	Ile 85	Lys	Leu	Lys	Leu	Gln 90	Gly	Gln	Gln	Leu	Pro 95	Val	
Val	Leu	Pro	Pro 100	Ile	Met	Lys	Gln	Pro 105	Pro	Met	Phe	Ser	Pro 110	Leu	Ile	
Ser	Ala	Arg 115	Phe	Gly	Met	Gly	Ser 120	Met	Pro	Asn	Leu	Ser 125	Ile	His	Gln	
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Ser	Val	Ser	Thr	Ser 165	Ser	Leu	Pro	Asn	Gly 170	Thr	Ala	Ser	Leu	Ile 175	Gln	

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  - Lys Glu Glu Trp Glu Arg Lys Gln Arg Glu Leu Gln Glu Gln Glu Trp 405 410 415

    Lys Lys Gln Leu Glu Leu Glu Lys Arg Leu Glu Lys Gln Arg Glu Leu 420 425 430

Leu Met Glu Gln Gln Gln Arg Glu Ala Glu Arg Lys Ala Gln Lys Glu

385

395

- Glu Arg Gln Arg Glu Glu Arg Arg Lys Glu Ile Glu Arg Arg Glu 435 440 445
- Ala Ala Lys Gln Glu Leu Glu Arg Gln Arg Arg Leu Glu Trp Glu Arg 450 455 460
- Leu Arg Arg Gln Glu Leu Leu Ser Gln Lys Thr Arg Glu Gln Glu Asp 465 470 475 480
- Ile Val Arg Leu Ser Ser Arg Lys Lys Ser Leu His Leu Glu Leu Glu 485 490 495

- Ala Val Asn Gly Lys His Gln Gln Ile Ser Gly Arg Leu Gln Asp Val 500 505 510
- Gln Ile Arg Lys Gln Thr Gln Lys Thr Glu Leu Glu Val Leu Asp Lys 515 520 525
- Gln Cys Asp Leu Glu Ile Met Glu Ile Lys Gln Leu Gln Gln Glu Leu 530 535
- Lys Glu Tyr Gln Asn Lys Leu Ile Tyr Leu Val Pro Glu Lys Gln Leu 545 550 555
- Leu Asn Glu Arg Ile Lys Asn Met Gln Leu Ser Asn Thr Pro Asp Ser 565 570 575
- Gly Ile Ser Leu Leu His Lys Lys Ser Ser Glu Lys Glu Glu Leu Cys 580 585 590
- Gln Arg Leu Lys Glu Gln Leu Asp Ala Leu Glu Lys Glu Thr Ala Ser 595 600 605
- Lys Leu Ser Glu Met Asp Ser Phe Asn Asn Gln Leu Lys Glu Leu Arg 610 615 620
- Glu Ser Tyr Asn Thr Gln Gln Leu Ala Leu Glu Gln Leu His Lys Ile 625 630 635 640
- Lys Arg Asp Lys Leu Lys Glu Ile Glu Arg Lys Arg Leu Glu Gln Ile 645 650 655
- Gln Lys Lys Leu Glu Asp Glu Ala Ala Arg Lys Ala Lys Gln Gly 660 665 670
- Lys Glu Asn Leu Trp Arg Glu Ser Ile Arg Lys Glu Glu Glu Glu Lys 675 680 685
- Gln Lys Arg Leu Gln Glu Glu Lys Ser Gln Asp Lys Thr Gln Glu Glu 690 695 700
- Glu Arg Lys Ala Glu Ala Lys Gln Ser Glu Thr Ala Ser Ala Leu Val 705 710 715
- Asn Tyr Arg Ala Leu Tyr Pro Phe Glu Ala Arg Asn His Asp Glu Met 725 730 735
- Ser Phe Ser Ser Gly Asp Ile Ile Gln Val Asp Glu Lys Thr Val Gly 740 745 750
- Glu Pro Gly Trp Leu Tyr Gly Ser Phe Gln Gly Lys Phe Gly Trp Phe
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- Pro Cys Asn Tyr Val Glu Lys Val Leu Ser Ser Glu Lys Ala Leu Ser 770 780
- Pro Lys Lys Ala Leu Leu Pro Pro Thr Val Ser Leu Ser Ala Thr Ser 785 790 795 800
- Thr Ser Ser Gln Pro Pro Ala Ser Val Thr Asp Tyr His Asn Val Ser 805 810 815

- Phe Ser Asn Leu Thr Val Asn Thr Thr Trp Gln Gln Lys Ser Ala Phe 820 825 830
- Thr Arg Thr Val Ser Pro Gly Ser Val Ser Pro Ile His Gly Gln Gly 835 840 845
- Gln Ala Val Glu Asn Leu Lys Ala Gln Ala Leu Cys Ser Trp Thr Ala 850 855 860
- Lys Lys Glu Asn His Leu Asn Phe Ser Lys His Asp Val Ile Thr Val 865 870 875 880
- Leu Glu Gln Gln Glu Asn Trp Trp Phe Gly Glu Val His Gly Gly Arg 885 890 895
- Gly Trp Phe Pro Lys Ser Tyr Val Lys Leu Ile Pro Gly Asn Glu Val 900 905 910
- Gln Arg Gly Glu Pro Glu Ala Leu Tyr Ala Ala Val Thr Lys Lys Pro 915 920 925
- Thr Ser Thr Ala Tyr Pro Val Thr Ser Thr Ala Tyr Pro Val Gly Glu 930 935 940
- Asp Tyr Ile Ala Leu Tyr Ser Tyr Ser Ser Val Glu Pro Gly Asp Leu 945 950 955 960
- Thr Phe Thr Glu Gly Glu Glu Ile Leu Val Thr Gln Lys Asp Gly Glu 965 970 975
- Trp Trp Thr Gly Ser Ile Gly Glu Arg Thr Gly Ile Phe Pro Ser Asn 980 985 990
- Tyr Val Arg Pro Lys Asp Gln Glu Asn Phe Gly Asn Ala Ser Lys Ser 995 1000 1005
- Gly Ala Ser Asn Lys Lys Pro Glu Ile Ala Gln Val Thr Ser Ala Tyr 1010 1015 1020
- Ala Ala Ser Gly Thr Glu Gln Leu Ser Leu Ala Pro Gly Gln Leu Ile
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- Leu Ile Leu Lys Lys Asn Thr Ser Gly Trp Trp Gln Gly Glu Leu Gln
  1045 1050 1055
- Ala Arg Gly Lys Lys Arg Gln Lys Gly Trp Phe Pro Ala Ser His Val 1060 1065 1070
- Lys Leu Leu Gly Pro Ser Ser Glu Arg Thr Met Pro Thr Phe His Ala 1075 1080 1085
- Val Cys Gln Val Ile Ala Met Tyr Asp Tyr Met Ala Asn Asn Glu Asp 1090 1095 1100
- Glu Leu Asn Phe Ser Lys Gly Gln Leu Ile Asn Val Met Asn Lys Asp 105 1110 1115 1120
- Asp Pro Asp Trp Trp Gln Gly Glu Thr Asn Gly Leu Thr Gly Leu Phe 1125 1130 1135

Pro Ser Asn Tyr Val Lys Met Thr Thr Asp Ser Asp Pro Ser Gln Gln 1140 1150

Trp Cys Ala Asp Leu Gln Ala Leu Asp Thr Met Gln Pro Thr Glu Arg 1155 1160 1165

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Ala Arg Ser Gln Lys Thr Ser Gly Ile Gly Arg Leu Met Val His Val
50 55 60

Ile Glu Ala Thr Glu Leu Lys Ala Cys Lys Pro Asn Gly Lys Ser Asn 65 70 75 80

Pro Tyr Cys Glu Val Ser Met Gly Ser Gln Ser Tyr Thr Thr Arg Thr 85 90 95

Leu Gln Asp Thr Leu Asn Pro Lys Trp Asn Phe Asn Cys Gln Phe Phe 100 105 110

Ile Lys Asp Leu Tyr Gln Asp Val Leu Cys Leu Thr Met Phe Asp Arg 115 120 125

Asp Gln Phe Ser Pro Asp Asp Phe Leu Gly Arg Thr Glu Val Pro Val 130 135 140

Ala Lys Ile Arg Thr Glu Gln Glu Ser Lys Gly Pro Thr Thr Arg Arg 145 150 155 160

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Gly Leu Gly Lys Asn Ala Gln Gly Ile Ile Asn Pro Ile Glu Ala Lys  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Gln Arg Lys Gly Lys Gly Ala Val Gly Ala Tyr Gly Ser Glu Arg Thr
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Thr Gln Ser Leu Gln Asp Phe Pro Val Ala Asp Ser Glu Glu Glu Ala 65 70 75 80

Glu Glu Glu Phe Gln Lys Glu Leu Ser Gln Trp Arg Lys Asp Pro Ser 85 90 95

Gly Ser Lys Lys Lys Pro Lys Tyr Ser Tyr Lys Thr Val Glu Glu Leu 100 105 110

Lys Ala Lys Gly Arg Val Ser Lys Lys Leu Thr Ala Pro Gln Lys Glu 115 120 125

Leu Ser Gln Val Lys Val Ile Asp Met Thr Gly Arg Glu Gln Lys Val

Gly Val Pro Leu Leu Ala Gln Leu Pro Pro Thr Ala Gly Lys Glu Ala 165 170 175

Arg Met Pro Gly Phe Ala Leu Pro Glu Leu Glu His Asn Leu Gln Leu 180 185 190

Leu Ile Glu Arg Thr Glu Gln Glu Ile Ile Gln Ser Asp Arg Gln Leu 195 200 205

Gln Tyr Glu Arg Asp Met Val Val Ser Leu Ser His Glu Leu Glu Lys 210 215 220

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Lys	Val	Leu	Ala	Leu 245	Val	Glu	Glu	Cys	Glu 250	Arg	Arg	Met	Gln	Pro 255	His	
Gly	Thr	Asp	Pro 260	Leu	Thr	Leu	Asp	Glu 265	Cys	Ala	Arg	Ile	Phe 270	Glu	Thr	
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<213> Mus musculus

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Ser Ala Asn Pro Ala Lys Thr Met Gln Gly Ser Glu Val Val Ser Val
50 60

Leu Lys Ser Leu Leu Ser Asn Leu Asp Glu Ile Lys Lys Glu Arg Glu 65 70 75 80

Ser Leu Glu Asn Asp Leu Lys Ser Val Asn Phe Asp Met Thr Ser Lys 85 90 95

Phe Leu Thr Ala Leu Ala Gln Asp Gly Val Ile Asn Glu Glu Ala Leu 100 105 110

Ser Val Thr Glu Leu Asp Arg Ile Tyr Gly Gly Leu Thr Ser Lys Val 115 120 125

Gln Glu Ser Leu Lys Lys Gln Glu Gly Leu Leu Lys Asn Ile Gln Val

Ser His Gln Glu Phe Ser Lys Met Lys Gln Ser Asn Asn Glu Ala Asn

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Leu Arg Glu Glu Val Leu Lys Asn Leu Ala Thr Ala Tyr Asp Asn Phe
165 170 175

Val Glu Leu Val Ala Asn Leu Lys Glu Gly Thr Lys Phe Tyr Asn Glu 180 185 190

Leu Thr Glu Ile Leu Val Arg Phe Gln Asn Lys Cys Ser Asp Ile Val 195 200 205

Phe Ala Arg Lys Thr Glu Arg Asp Glu Leu Leu Lys Asp Leu Gln Gln 210 215 220

Ser Ile Ala Arg Glu Pro Ser Ala Pro Ser Ile Pro Pro Pro Ala Tyr 225 230 235 240

Gln Ser Ser Pro Ala Ala Gly His Ala Ala Pro Pro Thr Pro Ala 245 250 255

Pro Arg Thr Met Pro Pro Ala Lys Pro Gln Pro Pro Ala Arg Pro Pro 260 265 270

Pro Pro Val Leu Pro Ala Asn Arg Val Pro Pro Ala Ser Ala Ala Ala 275 280 285

Ala Pro Ala Gly Val Gly Thr Ala Ser Ala Ala Pro Pro Gln Thr Pro 290 295 300

Gly Ser Ala Pro Pro Pro Gln Ala Gln Gly Pro Pro Tyr Pro Thr Tyr 305 310 315 320

Pro Gly Tyr Pro Gly Tyr Cys Gln Met Pro Met Pro Met Gly Tyr Asn 325 330 335

Pro Tyr Ala Tyr Gly Gln Tyr Asn Met Pro Tyr Pro Pro Val Tyr His 340 345 350

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<sup>&</sup>lt;210> 18

<sup>&</sup>lt;211> 1521

<sup>&</sup>lt;212> DNA

<sup>&</sup>lt;213> Mus musculus

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<sup>&</sup>lt;210> 19

<sup>&</sup>lt;211> 720

<sup>&</sup>lt;212> DNA

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<sup>&</sup>lt;210> 21

<sup>&</sup>lt;211> 119

<sup>&</sup>lt;212> DNA

<sup>&</sup>lt;213> Mus musculus

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<213> Mus musculus

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65 70 75 80

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Ala Met Lys Leu Ile Lys Leu Lys Leu Gln Gly Tyr Gln Leu Pro Ser
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Pro	a gc o Al	a tt a Ph 11	e GI	t at	a gga e Gly	a ggg	g att / Ile 120	≥ Ala	a Se	c at r Me	g cc t Pr	a cc o Pre 12	o Le	c ac u Th	a gct r Ala	384
gt: Va	t gc l Ala 13	a Pr	t gt o Va	g cca l Pro	a ato	999 Gly 139	/ Ser	att Ile	cc Pr	a gt	t gt l Va 14	l Gl	a at	g tc t Se	t cca r Pro	432
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	aag Lys															1584
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				aag Lys 630											1920
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				cat His											2016
				gac Asp	_	_	_		_	_	_	_		_	2064
_		 _		aga Arg	-	_	_	_	_		-	-	-	-	2112
				cat His 710											2160
				gag Glu			_					_	_		2208
_	_		_	tat Tyr		_		_				_		_	2256
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				gag Glu											2352
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	_			gcc Ala					_	_			_		2448

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ac <u>g</u> Thi	g tgg Trj 850	~ - ~	c ag o Se	c ag r Se	c tca r Sei	a aad Asr 855	i GI	g aag 1 Lys	g cca s Pro	a gaa o Glu	a acc u Thi 860	: Asp	aac Asn	tgg Trp	gat Asp	2592
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acc a Thr 1 1025	aag Lys	aaa Lys	gat Asp	GIY	gac Asp 030	tgg Trp '	tgg Trp	acg ( Thr (	GLY	acg Thr 035	gtg g Val (	ggc g Gly <i>I</i>	gac a Asp I	ys S	tcc Ser 040	3120
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Asp Leu His	ctc tta g Leu Leu A 1220	sp Met Leu	acc ccg a Thr Pro ' 1225	act gag agg Thr Glu Arg 1	aag cgg caa Lys Arg Gln 230	3696
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280

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gcc Ala	cgt Arg	tct Ser	Gln	aag Lys 1525	act Thr	tca Ser	ggt Gly	Ile	1230 GJA aaa	cgt Arg	ctg Leu	atg Met	Val	cat His L535	gtc Val	4608	
att Ile	gaa Glu	Ala	aca Thr .540	gaa Glu	tta Leu	aaa Lys	Ala	tgc Cys .545	aaa Lys	cca Pro	aac Asn	Gly	aaa Lys .550	agt Ser	aat Asn	4656	
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atc i Ile i 1585	Lys	Asp	Leu	Tyr 1	Gln .590	Asp	Val	Leu	Cys 1	Leu .595	Thr	Met	Phe	Asp 1	Arg .600	4800	
gac (	Gln	Phe	Ser 1	Pro .605	Asp	Asp	Phe	Leu 1	Gly .610	Arg	Thr	Glu	Val 1	Pro .615	Val	4848	
gca a	Lys	Ile 1	Arg 620	Thr	Glu	Gln	Glu 1	Ser 625	Lys	Gly	Pro	Thr 1	Thr 630	Arg	Arg	4896	
cta ( Leu 1	Leu	ctg Leu 635	cac His	gaa Glu	gtc Val	Pro	act Thr 640	gga Gly	gaa Glu	gtc Val	${\tt Trp}$	gtc Val 645	cgc Arg	ttt Phe	gac Asp	4944	
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- Leu Gln Ser Gly Leu Pro Ala Pro Val Leu Ala Glu Ile Trp Ala Leu 50 55 60
- Ser Asp Leu Asn Lys Asp Gly Lys Met Asp Gln Gln Glu Phe Ser Ile
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- Ala Met Lys Leu Ile Lys Leu Lys Leu Gln Gly Gln Gln Leu Pro Val 85 90 95
- Val Leu Pro Pro Ile Met Lys Gln Pro Pro Met Phe Ser Pro Leu Ile 100 105 110
- Ser Ala Arg Phe Gly Met Gly Ser Met Pro Asn Leu Ser Ile His Gln
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- Pro Leu Pro Pro Val Ala Pro Ile Ala Thr Pro Leu Ser Ser Ala Thr 130 135 140
- Ser Gly Thr Ser Ile Pro Pro Leu Met Met Pro Ala Pro Leu Val Pro 145 150 155 160
- Ser Val Ser Thr Ser Ser Leu Pro Asn Gly Thr Ala Ser Leu Ile Gln 165 170 175
- Pro Leu Ser Ile Pro Tyr Ser Ser Ser Thr Leu Pro His Ala Ser Ser 180 185 190
- Tyr Ser Leu Met Met Gly Gly Phe Gly Gly Ala Ser Ile Gln Lys Ala 195 200 205
- Gln Ser Leu Ile Asp Leu Gly Ser Ser Ser Ser Thr Ser Ser Thr Ala 210 215 220
- Ser Leu Ser Gly Asn Ser Pro Lys Thr Gly Thr Ser Glu Trp Ala Val 225 230 235 240
- Pro Gln Pro Ser Arg Leu Lys Tyr Arg Gln Lys Phe Asn Ser Leu Asp 245 255
- Lys Gly Met Ser Gly Tyr Leu Ser Gly Phe Gln Ala Arg Asn Ala Leu 260 265 270
- Leu Gln Ser Asn Leu Ser Gln Thr Gln Leu Ala Thr Ile Trp Thr Leu 275 280 285
- Ala Asp Ile Asp Gly Asp Gly Gln Leu Lys Ala Glu Glu Phe Ile Leu 290 295 300
- Ala Met His Leu Thr Asp Met Ala Lys Ala Gly Gln Pro Leu Pro Leu

Thr Leu Pro Pro Glu Leu Val Pro Pro Ser Phe Arg Gly Gly Lys Gln 325

Val Asp Ser Val Asn Gly Thr Leu Pro Ser Tyr Gln Lys Thr Gln Glu 345

Glu Glu Pro Gln Lys Lys Leu Pro Val Thr Phe Glu Asp Lys Arg Lys

Ala Asn Tyr Glu Arg Gly Asn Met Glu Leu Glu Lys Arg Arg Gln Val

Leu Met Glu Gln Gln Arg Glu Ala Glu Arg Lys Ala Gln Lys Glu

Lys Glu Glu Trp Glu Arg Lys Gln Arg Glu Leu Gln Glu Gln Trp 410

Lys Lys Gln Leu Glu Leu Glu Lys Arg Leu Glu Lys Gln Arg Glu Leu

Glu Arg Gln Arg Glu Glu Glu Arg Arg Lys Glu Ile Glu Arg Arg Glu

Ala Ala Lys Gln Glu Leu Glu Arg Gln Arg Arg Leu Glu Trp Glu Arg

Leu Arg Arg Gln Glu Leu Leu Ser Gln Lys Thr Arg Glu Gln Glu Asp 470 475

Ile Val Arg Leu Ser Ser Arg Lys Lys Ser Leu His Leu Glu Leu Glu

Ala Val Asn Gly Lys His Gln Gln Ile Ser Gly Arg Leu Gln Asp Val 505

Gln Ile Arg Lys Gln Thr Gln Lys Thr Glu Leu Glu Val Leu Asp Lys 520

Gln Cys Asp Leu Glu Ile Met Glu Ile Lys Gln Leu Gln Glu Leu 535

Lys Glu Tyr Gln Asn Lys Leu Ile Tyr Leu Val Pro Glu Lys Gln Leu

Leu Asn Glu Arg Ile Lys Asn Met Gln Leu Ser Asn Thr Pro Asp Ser 570

Gly Ile Ser Leu Leu His Lys Lys Ser Ser Glu Lys Glu Glu Leu Cys

Gln Arg Leu Lys Glu Gln Leu Asp Ala Leu Glu Lys Glu Thr Ala Ser 600

Lys Leu Ser Glu Met Asp Ser Phe Asn Asn Gln Leu Lys Glu Leu Arg

Glu Ser Tyr Asn Thr Gln Gln Leu Ala Leu Glu Gln Leu His Lys Ile

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Gln Lys Lys Leu Glu Asp Glu Ala Ala Arg Lys Ala Lys Gln Gly
660 665 670

Lys Glu Asn Leu Trp Arg Glu Ser Ile Arg Lys Glu Glu Glu Glu Lys
675 680 685

Gln Lys Arg Leu Gln Glu Glu Lys Ser Gln Asp Lys Thr Gln Glu Glu 690 695 700

Glu Arg Lys Ala Glu Ala Lys Gln Ser Glu Thr Ala Ser Ala Leu Val 705 710 715 720

Asn Tyr Arg Ala Leu Tyr Pro Phe Glu Ala Arg Asn His Asp Glu Met 725 730 735

Ser Phe Ser Ser Gly Asp Ile Ile Gln Val Asp Glu Lys Thr Val Gly 740 745 750

Glu Pro Gly Trp Leu Tyr Gly Ser Phe Gln Gly Lys Phe Gly Trp Phe 755 760 765

Pro Cys Asn Tyr Val Glu Lys Val Leu Ser Ser Glu Lys Ala Leu Ser 770 775 780

Pro Lys Lys Ala Leu Leu Pro Pro Thr Val Ser Leu Ser Ala Thr Ser 785 790 795 800

Thr Ser Ser Gln Pro Pro Ala Ser Val Thr Asp Tyr His Asn Val Ser 805 810 815

Phe Ser Asn Leu Thr Val Asn Thr Thr Trp Gln Gln Lys Ser Ala Phe 820 825 830

Thr Arg Thr Val Ser Pro Gly Ser Val Ser Pro Ile His Gly Gln Gly 835 840 845

Gln Ala Val Glu Asn Leu Lys Ala Gln Ala Leu Cys Ser Trp Thr Ala 850 860

Lys Lys Glu Asn His Leu Asn Phe Ser Lys His Asp Val Ile Thr Val 865 870 875 880

Leu Glu Gln Gln Glu Asn Trp Trp Phe Gly Glu Val His Gly Gly Arg 885 890 895

Gly Trp Phe Pro Lys Ser Tyr Val Lys Leu Ile Pro Gly Asn Glu Val 900 905 910

Gln Arg Gly Glu Pro Glu Ala Leu Tyr Ala Ala Val Thr Lys Lys Pro 915 920 925

Thr Ser Thr Ala Tyr Pro Val Thr Ser Thr Ala Tyr Pro Val Gly Glu 930 935 940

Asp Tyr Ile Ala Leu Tyr Ser Tyr Ser Ser Val Glu Pro Gly Asp Leu

Thr Phe Thr Glu Gly Glu Glu Ile Leu Val Thr Gln Lys Asp Gly Glu 965 970 975

Trp Trp Thr Gly Ser Ile Gly Glu Arg Thr Gly Ile Phe Pro Ser Asn 980 985 990

Tyr Val Arg Pro Lys Asp Gln Glu Asn Phe Gly Asn Ala Ser Lys Ser 995 1000 1005

Gly Ala Ser Asn Lys Lys Pro Glu Ile Ala Gln Val Thr Ser Ala Tyr 1010 1015 1020

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Asn Trp Lys Glu Leu Ile Met Ser Asn Thr Lys Leu Leu Arg Ala Leu 1220 1225 1230

Arg Val Arg Lys Lys Thr Gly Gly Glu Lys Met Pro Val Gln Met Ile 1235 1240 1245

Gly Asp Ile Leu Ala Ala Glu Leu Ser His Met Gln Ala Tyr Ile Arg 1250 1255 1260

Phe Cys Ser Cys Gln Leu Asn Gly Ala Thr Leu Leu Gln Gln Lys Thr

Asp Glu Asp Thr Asp Phe Lys Glu Phe Leu Lys Lys Leu Ala Ser Asp 1285 1290 1295

Pro Arg Cys Lys Gly Met Pro Leu Ser Ser Phe Leu Lys Pro Met 1300 1305 1310

Gln Arg Ile Thr Arg Tyr Pro Leu Leu Ile Arg Ser Ile Leu Glu Asn 1315 1320 1325

Thr Pro Gln Ser His Val Asp His Ser Ser Leu Lys Leu Ala Leu Glu 1330 1335 1340

Arg Ala Glu Glu Leu Cys Ser Gln Val Asn Glu Gly Val Arg Glu Lys 345 1350 1355 1360

Glu Asn Ser Asp Arg Leu Glu Trp Ile Gln Ala His Val Gln Cys Glu 1365 1370 1375

Gly Leu Ala Glu Gln Leu Ile Phe Asn Ser Leu Thr Asn Cys Leu Gly 1380 1385 1390

Pro Arg Lys Leu Leu His Ser Gly Lys Leu Tyr Lys Thr Lys Ser Asn 1395 1400 1405

Lys Glu Leu His Ala Phe Leu Phe Asn Asp Phe Leu Leu Thr Tyr 1410 1415 1420

Leu Val Arg Gln Phe Ala Ala Ala Ser Gly His Glu Lys Leu Phe Asn 425 1430 1435 1440

Ser Lys Ser Ser Ala Gln Phe Arg Met Tyr Lys Thr Pro Ile Phe Leu 1445 1450 1455

Asn Glu Val Leu Val Lys Leu Pro Thr Asp Pro Ser Gly Asp Glu Pro 1460 1465 1470

Val Phe His Ile Ser His Ile Asp Arg Val Tyr Thr Leu Arg Thr Asp 1475 1480 1485

Asn Ile Asn Glu Arg Thr Ala Trp Val Gln Lys Ile Lys Gly Ala Ser 1490 1495 1500

Glu Gln Tyr Ile Asp Thr Glu Lys Lys Lys Arg Glu Lys Ala Tyr Gln 505 1510 1515 1520

Ala Arg Ser Gln Lys Thr Ser Gly Ile Gly Arg Leu Met Val His Val 1525 1530 1535

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Pro Tyr Cys Glu Val Ser Met Gly Ser Gln Ser Tyr Thr Thr Arg Thr 1555 1560 1565

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